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FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER	
DOTE, JANIS L	

ART UNIT	PAPER NUMBER
1756	

DATE MAILED: 10/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/786,050	OGAWA ET AL.	
	Examiner	Art Unit	
	Janis L. Dote	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The examiner acknowledges the cancellation of claim 2 and the amendments to claims 1, 3, 6, 8, and 9 set forth in the amendment filed on Jul. 20, 2005. Claims 1 and 3-9 are pending.

2. The objection to the specification set forth in the office action mailed on Mar. 22, 2005, paragraph 1, has been withdrawn in response to the amended paragraphs at pages 58, 71, 80, 81, and 85 of the specification, set forth in the amendment filed on Jul. 20, 2005.

The objection to the specification set forth in the office action mailed on Mar. 22, 2005, paragraph 2, has been withdrawn in response to the amendment to claim 9 set forth in the amendment filed on Jul. 20, 2005.

The rejections of claims 3 and 6-8 under 35 U.S.C. 112, second paragraph, set forth in the office action mailed on Mar. 22, 2005, paragraph 5, have been withdrawn in response to the amendment to claim 3, 6, and 8 set forth in the amendment filed on Jul. 20, 2005.

The rejections under 35 U.S.C. 103(a) of claims 1, 2, and 8 over US 6,677,092 (Arai) combined with WO 03/073171 (Kishiki), of claims 1, 2, and 8 over US 4,857,432 (Tanikawa'432) combined with Kishiki, of claims 4 and 5 over Tanikawa'438 combined with Kishiki and the other cited references, and of claims 5 and 9

over Arai combined with Kishiki and the other cited references, set forth in the office action mailed on Mar. 22, 2005, paragraph 9, 12, 15, 17, 19, and 21, have been withdrawn. Applicants have perfected their claim to foreign priority under 35 U.S.C. 119 for the subject matter recited in instant claims 1, 2, 4, 5, 8, and 9. The verified English-language translation of the priority document Japanese Patent Application 2003-203863 filed on Jul. 20, 2005, provides antecedent basis as set forth under 35 U.S.C. 112, first paragraph, for the subject matter recited in instant claims 1, 2, 4, 5, 8, and 9. Accordingly, Kishiki is no longer prior art with respect to the subject matter recited instant claims 1, 2, 4, 5, 8, and 9.

3. The rejections under 35 U.S.C. 103(a) of claims 1-5 and 7-9 over US 2003/0158372 A1 (Shirai) combined with the other cited references set forth in the office action mailed on Mar. 22, 2005, paragraphs 10, 11, 13, 14, 16, 18, and 20, have been withdrawn in favor of the rejections based on the newly cited reference WO 03/052521 A1 (Kishiki'521) set forth infra.

4. The indicated allowability of claim 6 is withdrawn in view of the newly discovered reference to Japanese Patent 2003-202707 (JP'707). Rejections based on the newly cited reference follow.

5. The examiner notes that the term "average circularity" is defined at page 48, lines 1-13, as the "value determined by dividing the sum of measured circularity values of total particles having equivalent circle diameters of 3 μm to 400 μm, by the number of total particles," where the circularity is defined as L_o/L where "L_o represents a circumferential length of a circle having an area identical to that of a projected particle image, and L represents a circumferential length of the projected particle image processed at an image processing resolution of 512 X 512 (0.3 μm X 0.3 μm pixel)."

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 is indefinite in the phrase "(B) represents (i) compound of the following structures . . . " (emphasis added)

because it is not clear how the bivalent chemical group (B) of Formula (13) can be a compound. Furthermore, the structures recited in claim 9 for (B) represent bivalent groups, e.g., 1,2-phenylene, not compounds.

Claim 9 is further indefinite in the Markush group recited at line 12 because the group is missing the conjunction "or." Proper Markush language would be "R is A, B or C." MPEP 2173.05(h). It is not clear whether the grouping is closed.

8. Claims 1 and 9 are objected to because of the following informalities: Appropriate correction is required.

In claim 1, the typographic error "δ" in the phrase "saturation magnetization δs" and "remanent magnetization δr" (emphasis added). Said error occurred in the rewriting of the claim set forth in the amendment filed on Jul. 20, 2005. The Greek letter delta, "δ", should be replaced with the Greek letter sigma, "σ". See originally filed claim 1 and the originally filed specification at page 6, lines 21-23.

In claim 9, at lines 11 and 16, the unmatched parenthesis ")".

In claim 9, at line 14, the period following the phrase "2 to 18 carbon atoms." should be a comma.

9. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

10. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,677,092 B2 (Arai), as evidenced by US 6,379,855 B1 (Hayashi) combined with WO 03/073171 A1 (Kishiki), as evidenced by US 2004/0241565 A1 (US'565) and the American Chemical Society (ACS) STN File Registry Number 14481-26-6. The US published application, filed under 35 U.S.C. 371, is the national stage of the WO application of Kishiki, and therefore is presumed to have been an accurate English-language translation of the WO application of Kishiki. Therefore, the US published application is used merely as an approved English-language translation of the WO application. See US'565 for cites.

Arai discloses a magnetic toner comprising magnetic toner particles that comprise magnetic iron oxide particles and a binder resin and hydrophobic silica particles. Col. 8, lines 1-8; col. 16, lines 21-24, and 49-52; col. 23, line 62, to col. 24, line 56; and Table 4 at col. 25, example 1. The magnetic toner has a saturation magnetization of 32.2 emu/g and a residual (i.e., remanent) magnetization of 8.72 emu/g in a magnetic field of 10 KOe. Table 4, example 1. The saturation

magnetization of 32.2 emu/g, i.e., 32.2 Am^2/g, together with the residual magnetization of 8.72 emu/g, i.e., 8.72 Am^2/g, in a magnetic field of 10 KOe, i.e., 795.8 kA/m, meet the magnetization limitations recited in instant claim 1. See Hayashi, col. 7, lines 30-35, equating 1 emu/g to 1 Am^2/g, and a magnetic field of 795.8 kA/m to 10 KOe.

Arai does not exemplify a magnetic toner comprising a polyester binder resin as recited in the instant claims. However, Arai teaches that the type of binder resin in the toner is not particularly limited, and that the binder resin can be a polyester resin. Col. 5, lines 45-50.

Kishiki discloses a polyester toner binder resin that is obtained by using a titanium chelate compound as a catalyst. The polyester resin is obtained by reacting a phenol novolak-PO (i.e., propylene oxide) adduct with a dicarboxylic acid in the presence of potassium titanyl oxalate as the condensation catalyst. US'565, paragraph 0049, lines 7-8; and paragraphs 0268-0269, example 7, toner binder TB7. Potassium titanyl oxalate meets the compositional limitation recited in instant claims 1 and 2, and meets the compositional limitation of formula VII recited in instant claims 3 and 7, when m=2, n=1, and M is potassium. See the ACS STN File Registry Number 14481-26-6. The phenol novolak-propylene oxide adduct is

within the compositional limitation of the "oxyalkylene ether of a novolak-type phenolic resin" recited in instant claim 8. According to Kishiki, when a toner comprises the toner binder TB7, the toner is capable of maintaining good low temperature fixability and hot offset resistance. The toner binder TB7 prevents image quality deterioration even under low-temperature and low-humidity conditions. US'565, paragraph 0004; and Table 2 at page 14, example 7. Kishiki further discloses that there was "good" pigment dispersibility in the toner. The toner provides good quality images without staining the photoconductor. Table 2, example 7. Kishiki discloses that the toner pigment can be a magnetic powder. US'565, paragraph 0136.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kishiki, to use the Kishiki polyester toner binder resin TB7 as the binder resin in the magnetic toner disclosed by Araki, because that person would have had a reasonable expectation of successfully obtaining a magnetic toner that is capable of maintaining good low temperature fixability and hot offset resistance, and that provides good quality images even under low-temperature and low-humidity conditions without staining the photoconductor.

11. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,857,432 (Tanikawa'432), as evidenced by Hayashi, combined with Kishiki, as evidenced by US'565 and the ACS STN File Registry Number 14481-26-6. See US'565 for cites.

Tanikawa'432 discloses a magnetic toner comprising magnetic toner particles that comprise magnetic iron oxide particles, a binder resin, and a particular charge control agent, and hydrophobic silica particles. Example 1 at col. 14; and Table 2 at col. 17, example 1. The magnetic toner has a saturation magnetization of 30.3 emu/g and a residual (i.e., remanent) magnetization of 5.9 emu/g in a magnetic field of 10 KOe. Table 2, example 1. The saturation magnetization of 30.3 emu/g, i.e., 30.3 Am^2/g, together with the residual magnetization of 5.9 emu/g, i.e., 5.9 Am^2/g, in a magnetic field of 10 KOe, i.e., 795.8 kA/m, meet the magnetization limitations recited in instant claim 1. See Hayashi, col. 7, lines 30-35, equating 1 emu/g to 1 Am^2/g, and a magnetic field of 795.8 kA/m to 10 KOe.

Tanikawa'432 does not exemplify a magnetic toner comprising a polyester binder resin as recited in the instant claims. However, Tanikawa'432 teaches that the binder resin in the toner can be a polyester resin. Col. 11, line 1.

Kishiki discloses a polyester toner binder resin that is obtained by using a titanium chelate compound as a catalyst that

meets the polyester limitations recited in instant claims 3 and 7. The discussions of Kishiki and the ACS STN File Registry Number 14481-26-6 in paragraph 10 above are incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kishiki, to use the Kishiki polyester toner binder resin TB7 as the binder resin in the magnetic toner disclosed by Tanikawa'432, because that person would have had a reasonable expectation of successfully obtaining a magnetic toner that is capable of maintaining good low temperature fixability and hot offset resistance, and that provides good quality images even under low-temperature and low-humidity conditions without staining the photoconductor.

12. Applicants' arguments filed on Jul. 20, 2005, with respect to the rejections over Kishiki set forth in paragraphs 10 and 11 above have been fully considered but they are not persuasive.

Applicants assert that Kishiki is not prior art because, in their view, they have perfected their claim foreign priority under 35 U.S.C. 119 to Japanese patent application No. 2003-203863 by filing a verified English-language translation of said document on Jul. 20, 2005.

However, the translation does not provide an adequate

written description of the subject matter recited in instant claims 3 and 7 as required under 35 U.S.C. 112, first paragraph. The translation does not disclose the Ti chelate compounds represented by formulae (V) to (VIII). Nor does the translation disclose that the Ti chelate compounds represented by formulae (I) to (IV) can be "hydrates thereof" as recited in instant claims 3 and 7.

Accordingly, applicants have not perfected their claim to foreign priority for the subject matter recited in instant claims 3 and 7. Kishiki remains as prior art with respect to the subject matter recited in instant claims 3 and 7.

13. Claims 1, 3, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai, as evidenced by Hayashi, combined with WO 03/052521 A1 (Kishiki'521), as evidenced by US 2005/0064313 A1 (US'313) and the American Chemical Society (ACS) STN File Registry Number 14481-26-6. The US published application, filed under 35 U.S.C. 371, is the national stage of the WO application of Kishiki'521, and therefore is presumed to have been an accurate English-language translation of the WO application of Kishiki. Therefore, the US published application is used merely as an approved English-language translation of the WO application. See US'313 for cites.

Arai, as evidenced by Hayashi, discloses a magnetic toner as described in paragraph 10 above, which is incorporated herein by reference.

Arai does not exemplify a magnetic toner comprising a polyester binder resin as recited in the instant claims. However, Arai teaches that the type of binder resin in the toner is not particularly limited, and that the binder resin can be a polyester resin. Col. 5, lines 45-50.

Kishiki'521 discloses a particular polyester toner binder resin that is obtained by using a titanium chelate compound as a catalyst. The polyester resin is obtained by reacting a phenol novolak-EO (i.e., ethylene oxide) adduct with a dicarboxylic acid in the presence of potassium titanyl oxalate as the condensation catalyst. US'313, paragraph 0033, lines 11-19; example 4 in paragraphs 0252-0253 of toner binder resin T4. Potassium titanyl oxalate meets the compositional limitation recited in instant claims 1 and 2, and meets the compositional limitation of formula VII recited in instant claims 3 and 7, when m=2, n=1, and M is potassium. See the ACS STN File Registry Number 14481-26-6. The phenol novolak-ethylene oxide adduct is within the compositional limitation of the "oxyalkylene ether of a novolak-phenolic resin" recited in instant claim 8. According to Kishiki'521, when a toner

comprises the toner binder resin T4, the toner has excellent low temperature fixability and anti-hot offset property. The toner binder resin T4 is capable of giving good development results and providing toners with good fluidity. US'313, paragraph 0005; and Tables 1 and 2 at page 15, example T4. Kishiki'521 further teaches that there was "good" pigment dispersibility in the toner. Tables 1 and 2, example T4. Kishiki'521 discloses that the toner pigment can be a magnetic powder. US'313, paragraph 0202, lines 2 and 10, and paragraph 0203.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kishiki'521, to use the Kishiki'521 polyester toner binder resin T4 as the binder resin in the magnetic toner disclosed by Araki, because that person would have had a reasonable expectation of successfully obtaining a magnetic toner that has excellent low temperature fixability and hot offset resistance.

14. Claims 1, 3, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanikawa'432, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6. See US'313 for cites.

Tanikawa'432, as evidenced by Hayashi, discloses a magnetic toner as described in paragraph 11 above, which is incorporated herein by reference.

Tanikawa'432 does not exemplify a magnetic toner comprising a polyester binder resin as recited in the instant claims. However, Tanikawa'432 teaches that the binder resin in the toner can be a polyester resin. Col. 11, line 1.

Kishiki'521 discloses a particular polyester toner binder resin that is obtained by using a titanium chelate compound as a catalyst that meets the polyester limitations recited in instant claims 1, 3, 7 and 8. The discussions of Kishiki'521 and the ACS STN File Registry Number 14481-26-6 in paragraph 13 above are incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kishiki'521, to use the Kishiki'521 polyester toner binder resin T4 as the binder resin in the magnetic toner disclosed by Tanikawa'432, because that person would have had a reasonable expectation of successfully obtaining a magnetic toner that has excellent low temperature fixability and hot offset resistance.

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanikawa'438, as evidenced by Hayashi,

combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, as applied to claim 1 above, further combined with US 6,218,065 B1 (Tanikawa'065). See US'313 for cites.

Tanakawa'438, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, renders obvious a magnetic toner as described in paragraph 14 above, which is incorporated herein by reference.

Tanakawa'438 does not exemplify a magnetic toner comprising magnetic iron oxide particles comprising 0.1 to 2.0% by weight of an Si element as recited in instant claim 4.

Tanikawa'065 teaches that it is most preferred that the magnetic iron oxide used in magnetic toners contain a "different element" selected from the group consisting of magnesium, aluminum, silicon, phosphorus, and zirconium. Col. 48, lines 16-19. Tanikawa'065 teaches that the "different element" may be: introduced into the crystal lattice of the iron oxide; incorporated as an oxide thereof in the iron oxide; or present as an oxide or a hydroxide on the surface of the iron oxide particles. Col. 48, lines 20-23. According to Tanikawa'065, such a magnetic iron oxide containing such a different element exhibits a good affinity with and very good dispersibility in

the toner binder resin, which can be a polyester binder resin. Col. 46, lines 29-31, and col. 48, lines 32-34. Tanikawa'065 further teaches that the "different element" is preferably present at 0.2 to 5 wt% based on the iron element. If the amount is below 0.05 wt%, the "addition effect of the different element is scarce, thus failing to achieve good dispersibility and uniformity of chargeability." If the amount is greater than 10 wt%, the "charge liberation is liable to be excessive to cause insufficient chargeability, thus resulting in a lower image density and an increased fog." Col. 49, lines 1-8. Thus, the prior art reference recognizes that the amount of the "different element" in the magnetic iron oxide particles is a result-effective variable. The variation of a result-effective variable is presumably within the skill of the ordinary worker in the art. Tanikawa'065 exemplifies magnetic iron oxide particles comprising Si in an amount of 2 wt% or 0.5 wt% based on the iron element of the particles. See Table 3 at col. 59, magnetic material (i) and (ii). The amounts of 2 wt% and 0.5 wt% are within the range of 0.1 to 2 wt% recited in instant claim 4.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Tanikawa'065, to incorporate the element Si in the magnetic iron oxide particles

as taught by Tanikawa'065 in the magnetic toner disclosed by Tanikawa'438, such that the resultant magnetic iron oxide particles comprise Si in an amount, such as 0.5 or 2 wt% based on the iron content, that is within the amount recited in instant claim 4, and to use the resultant magnetic iron oxide particles in the magnetic toner rendered obvious over the combined teachings of Tanakawa'438, as evidenced by Hayashi, and Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6. That person would have had a reasonable expectation of successfully obtaining a magnetic toner having improved dispersibility of the magnetic iron oxide particles in the binder resin, and improved uniformity of chargeability as taught by Tanikawa'065.

16. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, as applied to claim 1 above, further combined with US 6,197,470 B1 (Tamura). See US'313 for cites.

Arai, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, renders obvious a magnetic toner as described in paragraph 13 above, which is incorporated herein by reference.

Arai does not exemplify a magnetic toner comprising a hydrophobic silica as recited in instant claim 5.

Tamura teaches hydrophobic silica particles that are treated with hexamethyldisilazane and a dimethylsilicone oil. Col. 22, lines 35-56, hydrophobic fine silica powder A; and Table 1 at col. 25, treated silica A. The Tamura hydrophobic silica powder A has particular hydrophobic properties. Col. 2, lines 34-49; and Table 2 at col. 25, treated silica A. According to Tamura, when the Tamura hydrophobic silica powder A is externally added to a toner, the toner can keep smeared images from occurring even in an environment of high temperature and high humidity. The toner has good transfer efficiency and does not cause melt abrasion of the photosensitive drum. Col. 2, lines 10-22.

It would have been obvious for a person having ordinary skill in the art to use the Tamura hydrophobic silica powder A as the externally added hydrophobic silica in the magnetic toner rendered obvious over the combined teachings of Arai, as evidenced by Hayashi, and Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6. That person would have had a reasonable expectation of successfully obtaining a magnetic toner that has good transfer efficiency, that does not cause melt abrasion of the photosensitive drums,

and that provides images without smearing even in an environment of high temperature and high humidity, as taught by Tamura.

17. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanikawa'438, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, as applied to claim 1 above, further combined with Tamura. See US'313 for cites.

Tanikawa'438, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, renders obvious a magnetic toner as described in paragraph 14 above, which is incorporated herein by reference.

Tanikawa'438 does not exemplify a magnetic toner comprising a hydrophobic silica as recited in instant claim 5.

Tamura teaches hydrophobic silica particles that are treated with hexamethyldisilazane and a dimethylsilicone oil. The discussion of Tamura in paragraph 16 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use the Tamura hydrophobic silica powder A as the externally added hydrophobic silica in the magnetic toner rendered obvious over the combined teachings of Tanikawa'438, as

evidenced by Hayashi, and Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6. That person would have had a reasonable expectation of successfully obtaining a magnetic toner that has good transfer efficiency, that does not cause melt abrasion of the photosensitive drums, and that provides images without smearing even in an environment of high temperature and high humidity, as taught by Tamura.

18. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, as applied to claim 1 above, further combined with Tanikawa'065. See US'313 for cites.

Arai, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, renders obvious a magnetic toner as described in paragraph 13 above, which is incorporated herein by reference.

Arai does not exemplify a magnetic toner comprising a metal aromatic hydroxycarboxylate as recited in instant claim 9. However, Arai teaches that the magnetic toner can comprise a charge control agent to improve the charging level, charge rising property, and fluidity of the toner. Col. 15, lines 16-20.

Tanikawa'065 teaches organic zirconium complexes of aromatic hydroxycarboxylic acids as toner charge controlling agents. Col. 3, lines 15-25; col. 6, line 60, to col. 7, line 35; and col. 7, line 45, to col. 8, line 27. The Tanikawa'065 zirconium complexes meet the "metal aromatic hydroxycarboxylate" limitation recited in instant claim 9. According to Tanikawa'065, toners comprising said charge controlling compounds have negative triboelectric chargeability, and stably provide high quality images "even when used in a low humidity environment or in a high humidity environment and not causing image defects with lapse of time." The toner is "less liable to result in deteriorated toner even when used in a cartridge-type developing device of either a replenishment type or a use-up type." The toner also exhibits excellent developing performance and provides "developed images faithful to electrostatic images even in a long term of continuous image formation." Col. 2, lines 1-18.

It would have been obvious for a person having ordinary skill in the art to use the Tanikawa'065 zirconium complex of an aromatic hydroxycarboxylic acid as the charge control agent in the magnetic toner rendered obvious over the combined teachings of Arai, as evidenced by Hayashi, and Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6. That

person would have had a reasonable expectation of successfully obtaining a negative triboelectric chargeable magnetic toner having the advantages disclosed by Tanikawa'065.

19. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, as applied to claim 1 above, further combined with Japanese Patent 2003-202707 (JP'707), as evidenced by applicants' admission at page 48, lines 20-26, and page 49, lines 12-26, of the instant specification. See US'313 for cites and the Japanese Patent Office (JPO) machine-assisted translation of JP'707 for cites.

Arai, as evidenced by Hayashi, combined with Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, renders obvious a magnetic toner as described in paragraph 13 above, which is incorporated herein by reference. The Arai magnetic toner is obtained by a melt-kneading-grinding-classification method. See Arai, col. 17, lines 14-19; and example 1. Arai further teaches that the magnetic toner can comprise a charge control agent to improve the charging level, charge rising property, and fluidity of the toner. Col. 15, lines 16-20.

Arai does not disclose that its magnetic toner has an average circularity of 0.930 to less than 0.970 as recited in instant claim 6.

JP'707 teaches a toner comprising a particular metal compound aromatic hydroxycarboxylic acid, e.g., zinc dibutylsalicylic acid, as the charge control agent and having an average circularity of 0.88 to 0.95, preferably of 0.90 to 0.94, for particles having a "circle equivalent diameter" of 3 μm or more. Translation, paragraph 0006, paragraph 0018, lines 1-6, paragraph 0027, and paragraph 0064. Both average circularity ranges overlap the range of 0.930 to less than 0.970 recited in instant claim 6. JP'707 exemplifies a toner having an average circularity of 0.943, which is within the range of 0.930 to 0.970 recited in instant claim 6. Translation, table 2 at page 16, example 3. JP'707 also discloses that said toner can be a magnetic toner. Translation, paragraph 0046, lines 2-12.

The JP'707 average circularity is defined by an equation that is identical to the equation used in determining the average circularity recited in instant claim 6, but for the disclosure that "L_o represents a circumferential length of a circle having an area identical to that of a projected particle image, and L represents a circumferential length of the projected particle image processed at an image processing

resolution of 512 X 512 (0.3 μm X 0.3 μm pixel)." See paragraph 5 supra; and the translation, paragraphs 0019-0021. JP'707 also does not disclose that the average circularity is for particles having equivalent circle diameters of 3 μm to 400 μm as recited in instant claim 6.

However, as discussed supra, JP'707 teaches that its average circularity is for particles having a "circle equivalent diameter" of 3 μm or more. In addition, the JP'707 average circularity is determined by the flow-type particle image analyzer FPIA-2100, which appears to be the same analyzer used in the instant specification to determine the average circularity recited in instant claim 6. Translation, paragraph 0018, lines 11-12; and instant application, page 48, lines 20-26, and page 49, lines 12-26. Thus, it is reasonable to conclude that the JP'707 average circularity is determined in the same manner as the average circularity recited in instant claim 6. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

JP'707 teaches that in the making of toner particles by a melt-kneading-grinding-classification method, the conditions in the grinding step can be adjusted to obtain toner particles having the desired shape, i.e., circularity. Translation, paragraphs 0051-0054; and JP'707, Figs. 1-6.

According to JP'707, when a toner comprises said particular aromatic hydroxycarboxylic acid and has an average circularity of 0.88 to 0.95, the toner has excellent electrostatic chargeability and durability. The toner has no problems in fluidity, offset resistance, and blocking. The toner can provide good quality images for a long period of time. Translation, paragraphs 0005 and 0084. JP'707 exemplifies a toner having an average circularity of 0.868. That toner provided initially a toner image having good toner density, but too much fog. After 2000 copies, the toner provided a toner image with decreased image density and too much fog. Paragraph 0078, lines 6-14, and Table 3 at page 17, comparison example 2. JP'707 further exemplifies a toner having an average circularity greater than 0.95. That toner initially provided a good toner image. However, after continuous use, the toner image had decreased toner density and increased fogging, and increased toner scattering was observed. Paragraph, 0023, lines 9-13; paragraph 0079, lines 5-12; and Table 3 at page 17, comparison example 3. Thus, the reference recognizes that the average circularity is a result-effective variable. The variation of a result-effective variable is presumably within the skill of the ordinary worker in the art.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of JP'707, to use the JP'707 charge control agent as the charge control agent in the magnetic toner rendered obvious over the combined teachings of Arai, as evidenced by Hayashi, and Kishiki'521, as evidenced by US'313 and the ACS STN File Registry Number 14481-26-6, and to adjust the grinding conditions as taught by JP'707, such that the resultant toner particles have an average circularity within the range of 0.930 to less than 0.970 as recited in instant claim 6. That person would have had a reasonable expectation of successfully obtaining a magnetic toner that has excellent electrostatic chargeability and durability, that has no problems in fluidity, offset resistance, and blocking, and that provides good quality images for a long period of time.

20. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

21. Claims 1, 3, and 7 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-6, 9, and 10 of copending Application No. 10/717,452 (Application'452) in view of Tamura and Tanikawa'432, as evidenced by Hayashi.

This is a provisional obviousness-type double patenting rejection.

Reference claim 3, which depends from reference claim 1, recites toner particles comprising a colorant, a release agent, a polar resin, and an inorganic fine powder. The polar resin comprises a polyester unit polymerized in the present of a titanium chelate catalyst that meets the Ti chelate catalyst limitations recited in instant claims 3 and 7. The toner particles are obtained by carrying out granulation in an aqueous medium. Reference claim 10, which depends from reference claim 1, recites that the toner particles are obtained by dispersing in an aqueous medium a polymerizable monomer composition that contains at least a polymerizable monomer, the colorant, the polar resin, the release agent, a charge control agent and a polymerization initiator, granulating the

polymerizable monomer composition, and polymerizing the polymerizable monomer.

The reference claims of Application'452 do not recite that the toner can be a magnetic toner as recited in the instant claims. However, it is well-known in the toner art that magnetic substances can be used as a toner colorant. See Tamura, col. 18, lines 56-64.

Tanikawa'432 discloses a magnetic toner that comprises toner particles that comprise a particular magnetic iron oxide particles, a binder resin, and a particular charge control agent, and hydrophobic silica particles. The magnetic toner has a saturation magnetization and a remanent magnetization that meet the magnetization limitations recited in instant claim 1. The discussions of Tanikawa'432 and Hayashi in paragraph 11 above are incorporated herein by reference. According to Tanikawa'432, the magnetic toner particles can be obtained by a polymerization method in which the predetermined toner materials are "mixed in a monomer which should constitute the binder resin to form a suspension, followed by polymerization, to obtain the toner." Col. 12, lines 9-12. The method disclosed by Tanikawa'438 appears to be similar to the method recited in reference claim 10. Tanikawa'438 further teaches that the magnetic toner provides "stable toner images without the

influence from changes in the environment such as temperature change, humidity change." The magnetic toner can also provide stable images even in continuous use for a long period of time. Col. 2, lines 5-12, and Table 1 at col. 15, example 1.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in the claims of Application'452 and the teachings of Tanikawa'438, to use the Tanikawa'438 magnetic particles and the Tanikawa'438 charge control agent as the colorant and the charge control agent in the toner recited in the claims of Application'452, such that the resultant magnetic toner has the saturation and remanent magnetizations as recited in instant claim 1. That person would have had a reasonable expectation of successfully obtaining a magnetic toner having the advantages taught by Tanikawa'438.

22. Claim 4 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-6, 9, and 10 of Application'452 in view of Tamura and Tanikawa'432, as evidenced by Hayashi, further in view with Tanikawa'065. This is a provisional obviousness-type double patenting rejection.

The subject matter recited in the claims of Application'452 in view of the teachings in Tamura and Tanakawa'438, as evidenced by Hayashi, renders obvious a magnetic toner as described in paragraph 21 above, which is incorporated herein by reference.

Tanakawa'438 does not exemplify a magnetic toner comprising magnetic iron oxide particles comprising 0.1 to 2.0% by weight of an Si element as recited in instant claim 4.

Tanikawa'065 teaches the use of magnetic iron oxide particles comprising Si in magnetic toners. The discussion of Tanikawa'065 in paragraph 15 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Tanikawa'065, to incorporate the element Si in the magnetic iron oxide particles as taught by Tanikawa'065, such that the resultant magnetic iron oxide particles comprise Si in an amount, such as 0.5 or 2 wt% based on the iron content, that is within the amount recited in instant claim 4, and to use the resultant magnetic iron oxide particles in the magnetic toner rendered obvious over subject matter recited in the claims of Application'452 combined with the teachings of Tamura and Tanakawa'438, as evidenced by Hayashi. That person would have had a reasonable expectation of

successfully obtaining a magnetic toner having improved dispersibility of the magnetic iron oxide particles in the binder resin, and improved uniformity of chargeability as taught by Tanikawa'065.

23. Claim 5 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-6, 9, and 10 of Application'452 in view of Tamura and Tanikawa'432, as evidenced by Hayashi, further in view of additional teachings in Tamura. This is a provisional obviousness-type double patenting rejection.

The subject matter recited in the claims of Application'452 in view of the teachings in Tamura and Tanakawa'438, as evidenced by Hayashi, renders obvious a magnetic toner as described in paragraph 21 above, which is incorporated herein by reference.

The claims in Application'452 do not recite and Tanakawa'438 does not disclose a hydrophobic silica as recited in instant claim 5.

Tamura teaches hydrophobic silica particles that are treated with hexamethyldisilazane and a dimethylsilicone oil. The discussion of Tamura in paragraph 16 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use the Tamura hydrophobic silica powder A as an externally added hydrophobic silica in the magnetic toner rendered obvious over subject matter recited in the claims of Application'452 combined with the teachings of Tamura and Tanakawa'438, as evidenced by Hayashi. That person would have had a reasonable expectation of successfully obtaining a magnetic toner that has good transfer efficiency, that does not cause melt abrasion of the photosensitive drums, and that provides images without smearing even in an environment of high temperature and high humidity, as taught by Tamura.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (571) 273-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JANIS L. DOTE
PRIMARY EXAMINER
GROUP ~~1500~~ 1700

JLD
Oct. 3, 2005